MCI Communications Corporation

1801 Pennsylvania Avenue, NW
Washington, DC 20006

ORIGINAL

August 28, 1998

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: **DA 98-1587**
CC Docket No. 96-45; Federal-State Joint Board on Universal Service
CC Docket No. 97-160; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs

Dear Ms. Salas:

Enclosed herewith for filing are the original and five (5) copies of MCI Telecommunications Corporation's Comments in the above-captioned proceeding.

Please acknowledge receipt by affixing an appropriate notation on the copy of the Comments furnished for such purpose and remit same to the bearer.

Sincerely yours,

Chris Frentrup

Chris Frentrup
Senior Economist
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(202) 887-2731

MCI Telecommunications Corporation

Enclosure

ORIGINAL

RECEIVED

AUG 28 1998

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	DA 98-1587
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160
	)	

COMMENTS OF
MCI TELECOMMUNICATIONS CORPORATION

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COMMENTS OF
MCI TELECOMMUNICATIONS CORPORATION

MCI Telecommunications Corporation (MCI) hereby submits its comments in response to the Public Notice released August 7, 1998 in the above-captioned proceeding.[1] In that Public Notice, the Commission notes that three models have been submitted for consideration as the platform for the federal universal service mechanism; the Benchmark Cost Proxy Model (BCPM), the HAI Model (HAI), and the Hybrid Cost Proxy Model (HCPM), and seeks further comment on approaches to a model platform that would combine specific aspects from the customer location and outside plant modules of each of these three models. Specifically, the Commission seeks comment on the use of geocoded customer location data, the

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[1] See Common Carrier Bureau Seeks Comment on Model Platform Development, Public Notice, CC Docket Nos. 96-45, 97-160, DA 98-1587, released August 7, 1998 (Public Notice)

method to be used for the placement of customer locations for which good geocoded data are not available, the algorithm to be used to cluster customer locations, and the design of distribution and feeder plant to those customer locations.[2]

I. THE SELECTED PLATFORM SHOULD INCORPORATE GEOCODED CUSTOMER LOCATION DATA

The use of geocoded customer location data, wherever and to the extent that it is available, is clearly preferable to placing all customers throughout the Census Block (CB), or assuming that customers are uniformly distributed along roads. Even in rural areas, people are likely to be clustered to some extent, and geocoded data will capture that fact. The only real question with regard to customer locations that must be resolved is where to place the customers for which no good geocode data are available.

The Public Notice discusses three options for placing those customers: (1) distributed along the boundary and internal roads of the CB; (2) distributed along the boundary roads of the CB, and; (3) distributed randomly throughout the CB. In selecting among these alternatives, the platform should reflect how customers are likely to be distributed. Thus, because the third option is highly unlikely to occur in reality, it should not be adopted. People are more likely to live along roads, and close to each other; placing people randomly throughout the CB will therefore very

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[2] The Commission has also released on its website version 2.6 of the HCPM, which implements one approach to these modifications.

likely overstate the degree of customer dispersion, and thus overstate the costs of the network. The only two real options are therefore placement along the CB boundary, or along all roads.

In choosing between these two options, there will in many cases be no difference; the only roads in the CB will be the boundary roads. However, placing customers uniformly along all roads is likely to result in an excessive amount of customer dispersion. While it is true that people generally live along roads, it is not true that they live along all roads, nor that they are evenly distributed along the roads on which they do live. For example, people are less likely to locate along a state highway or logging road than along a cul-de-sac that runs off of the state highway. The HAI conservatively assumed that customers who could not be accurately geocoded would be uniformly distributed along the boundaries of the CB.[3] So long as the roads along which customers are assumed by the model to be located are indeed the kinds of roads along which customers live, it might improve the accuracy of the model to place customers along those roads rather than only on the CB boundary.

In any case, if non-geocoded customer locations are placed along roads, whether CB boundary roads or interior roads also, this will probably overstate the amount of customer dispersion. This is an unavoidable result of the lack of good

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[3] As the HAI sponsors have demonstrated, placing customers along all roads rather than along the CB boundary tends to lower costs somewhat. See Ex Parte Letter from Richard N. Clarke to Magalie Roman Salas, June 10, 1998, CC Docket No. 96-45.

data, but it must be recognized that this upward bias in the modeling process exists. If the Commission places customers along all roads, the problem is likely to be even more severe, because customers will be placed on roads where they do not live, such as highways and logging roads, thereby increasing the apparent customer dispersion and increasing network costs. If the Commission also adopts the method for designing distribution plant discussed infra, this will further increase the probability that costs are overstated.

II. COMPARISON OF THE CLUSTERING ALGORITHMS REQUIRES DATA FOR MORE STATES

The Public Notice correctly proposes to incorporate the idea of customer clustering. Thus, customers are grouped for purposes of plant placement by their physical proximity rather than by arbitrary geographic boundaries, such as CBs or grid cells. This approach ensures that the model reflects more closely the way a network would be built in the real world.

The HAI performs its clustering by starting from a point, and adding individual locations to the cluster as long as the locations meet network design criteria for distance from the nearest neighbor, total distance of the loop, and number of customers served by one Serving Area Interface (SAI). The HCPM's approach apparently starts from the other direction, using a "divisive" approach, which splits new clusters from an existing cluster based on the distance of customers from the line-weighted centroid of the existing cluster.

In principle, either of these clustering methods should provide reasonable

results. Unfortunately, the only data so far available for comparison is the Commission's created dataset for Maryland. When MCI has tried to run the Commission's clustering algorithm, it has taken about six hours to run this one dataset. Since Maryland is a relatively small state, it can be expected that larger states, such as Texas or Florida, will take much longer. Until data for more states can be run through the two algorithms and the results compared, no comparison of the merits of the two methodologies is possible.

III. BUILDING PLANT DIRECTLY TO SURROGATE LOCATIONS MAY PLACE EXCESSIVE PLANT

The Commission seeks comment on a proposed approach to designing distribution plant that would overlay the geocoded customer location data with a grid. This, the Commission believes, would allow the model platform to design distribution plant to reach actual customer locations. However, as pointed out above, when customers are placed at surrogate locations, they are likely placed in such a way as to overstate the amount of customer dispersion, resulting in excessive plant if it is built directly to these customer locations. As AT&T and MCI demonstrated in previous ex partes, in the state proceedings in Nevada and Texas in which actual loop length data were made available the HAI model built more than enough plant to reach all customer locations.[4]

IV. CONCLUSION

The Commission is correct in its desire to use geocoded data to locate

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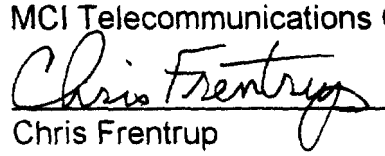
[4] Id.

customers, and to cluster those customer locations based on their proximity rather than arbitrary boundaries. Placement of surrogate customer locations for those customers whose precise geocode position is not known should reflect as nearly as possible the manner in which customers are dispersed in the real world. Because customers tend to locate in clusters rather than be uniformly distributed across an area, any surrogate method which distributes customers along roads, whether on CB boundaries or on interior roads, will probably overstate the actual customer dispersion. This problem is exacerbated if customers are placed along all roads, regardless of whether the type of road, such as a state highway, typically has customers located along it. Finally, the HCPM's approach to determining clusters of customer locations needs to be run on further data before a comparison of that approach to the HAI approach can be made.

Respectfully submitted,

MCI Telecommunications Corporation



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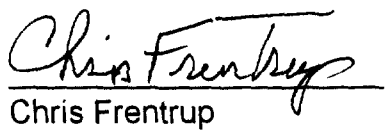
August 28, 1998

STATEMENT OF VERIFICATION

I have read the foregoing and, to the best of my knowledge, information, and belief, there is good ground to support it, and it is not interposed for delay. I verify under penalty of perjury that the foregoing is true and correct. Executed on August 28, 1998.



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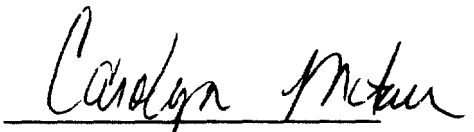
CERTIFICATE OF SERVICE

I, Carolyn McTaw, do hereby certify that on this 28th day of August 1998, I caused a copy of the foregoing Comments of MCI Telecommunications Corporation to be served upon each of the parties listed on the attached Service List by U.S. First Class mail, postage prepaid.



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